Justin Barnett

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Background

Senior Software Engineer with 9+ years building low-latency, high-throughput systems. Expertise in C++/Go for exchange infrastructure, order matching engines, and real-time data pipelines. Experience reducing hot-path latency, cutting infrastructure costs, and leading small engineering teams in fast-paced environments.

Skills

Core Languages: C++ (Daily), Go (Daily), Python (Daily), Java (Intermediate)
Infrastructure: AWS (EC2, S3, DynamoDB, Lambda, RDS, AutoScaling, IAM, CloudFormation), GCP (App Engine, Cloud Storage, CloudSQL), Git, Django
Domain Knowledge: Derivatives Exchange Architecture, Market Maker Onboarding, Quantitative Investment Signals, Alternative Data Pipelines, DoD IL5 Compliance

Professional Experience

Senior Software Engineer - dYdX Trading

June 2025 - Current
New York, NY

Go • dYdX is a leading decentralized derivatives exchange processing billions in daily trading volume

- Designed and built a perpetual futures exchange from the ground up, contributing directly to the sequencer, core matching engine, low-latency gateways, and oracle price feed.
- Designed and built a high-throughput sequencer on LMAX Disruptor processing **1.2M messages/second** at peak load with deterministic ordering, exactly-once delivery, cancel priority, and taker speed bump; stateless recovery mechanism enabled full state reconstruction after crashes
- Core contributor to deterministic matching engine architecture spanning live and conditional order book design, 24/7 equity trading, gap detection, GTT expiry, point-in-time snapshotting, and test/replay harnesses for correctness verification — system processes **~400K TPS** with sub-5ms round-trip latency
- Restructured the trading hot path end-to-end, cutting round-trip latency **66% (15ms → 5ms)** — directly improving fill quality and adverse selection for market maker clients
- Designed and deployed a co-located exchange gateway ingesting 200K msg/s via REST and WebSocket; optimized signature verification and order validation on the critical path to minimize gate-to-matching latency
- Reduced cloud infrastructure spend by **25% (AWS)** and **20% (GCP)** through topology redesign and capacity right-sizing; led cross-functional infrastructure planning across engineering teams
- Onboarded institutional market makers, translated trading workflow requirements into roadmap priorities, and led a 4-engineer team to deliver exchange features

Software Engineer - Monarch (Time-Series DB) | Google

May 2022 - June 2025
New York, NY

C++, SQL, Go • Monarch is Google's internal petabyte-scale time-series DB ingesting trillions of data points/day

- Designed, prototyped, and led delivery of a bidirectional streaming API for real-time configuration change propagation, with built-in filtering and flow control — **saved 3 GB/s of global network bandwidth**
- Led a binary decomposition initiative separating core streaming from proxy infrastructure; produced resource impact analysis, executed migration across **26 dependent jobs and ~2 million running instances** with zero downtime
- Tech lead for a unified API surface project that replaced 50% (36) of public endpoints with consistent get/set/list interfaces, saving **$300k/year** in maintenance costs and removing 10,000 lines of code; mentored 2 junior engineers through delivery
- Led compliance effort to achieve **US DoD IL5 certification**, enabling Google Cloud adoption by defense agencies — required deep coordination across security, infra, and legal teams

Software Engineer (20%) | Google Ventures (GV)

Jan 2024 - July 2024
New York, NY

C++ • Quantitative VC research platform

- Built a **news aggregation and alerting pipeline** to monitor portfolio companies across the internet in real time; integrated signals directly into a quantitative VC investment platform

Software Development Engineer, Prime Video Automation | Amazon

Aug 2020 – May 2022
New York, NY

Java, JavaScript

- Tech lead for partner onboarding migration software that **enabled a $100M contract** with third-party merchandisers (Paramount, AMC+) to automate content publishing to the Prime Video storefront
- Led scaling initiative for image **CMS handling 250M+ requests/day**; resolved bottlenecks and improved service availability **from 99.95% to 99.99%**

Software Consultant | Interlace Ventures
Sept 2021 – Sept 2022
Python • Quantitative investment advisory
New York, NY

- Built alternative data pipelines including asset graphs, LinkedIn scraping, and email sourcing to support quantitative investment decisions

Founder & Tech Lead | Glazenation LLC
Sept 2017 – Aug 2020
Python, Swift, iOS
Los Angeles, CA

- Tech Lead for Hairdoo (haircut on demand app); introduced CI/CD via Fastlane and Heroku, created staged namespaces for error isolation, and built a unified iOS component library
- Hired and led small engineering team to build iOS/Android features including dynamic booking, women's haircuts, and subscription flows
- Built, operated, and sold multiple ventures including Glazey (acquired)

Software Engineering Intern - UberPOOL | Uber Technologies
May 2016 - Aug 2016
Objective-C, Go
San Francisco, CA

Education

Grainger College of Engineering, University of Illinois at Urbana Champaign
Aug 2013 - May 2017 &
May 2020 - Aug 2020
Bachelor of Science, Computer Engineering
Relevant coursework: Operating Systems, Data Structures and Algorithms, Parallel Programming, Computer Networking

Achievements

Spacemob (Quantitative Research) - Developed web scrapers and alternative data feeds for a distributed research group focused on AST Spacemobile ($ASTS). Generated multiple actionable alpha signals adopted by the group.

Udemy - Created suite of Generative AI courses with 140,000+ students enrolled. Used by major global corps like Tata's Consulting Services and JP Morgan Chase